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Technology and Teaching the New Generation

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IGNATIAN PEDAGOGY TODAY: THE NEW TEACHING AND TRADITIONAL VALUES

TECHNOLOGY AND TEACHING THE NEW GENERATION...

How will we prepare for the future?

By Debra Busacco, Ph.D. and Eugeniu Grigorescu, MS

Today's students have different expectations about higher education. Diana Oblinger, in an article published *in Educause* (2003) discusses the learning styles for different generations of students. Traditional college-age students, known as Millennials, exhibit distinct learning styles as compared to adult learners. Millennials tend to prefer teamwork, experiential learning, structure, and the use of technology. College students are very savvy about technology. Most students have been raised with computers in elementary and secondary schools and tend to spend a great deal of their spare time in technology-oriented recreational activities, including the Internet and interactive games. The new generation of college students wants to be actively engaged in the learning process and many prefer to have technology integrated into their academic experiences.

Over the last decade many institutions of higher education have expanded their use of technology to deliver courses and programs. College students have access to online courses and programs, either through traditional or virtual universities. Most colleges and universities in the country offer online courses. Figure 1 shows that over 90 percent of public institutions offer at least one online course. Over half of private, nonprofit schools also offer at least one online course. The growing use of technology to deliver higher education has many faculty and administrators in Jesuit universities and colleges questioning how technology fits into traditional Jesuit and Catholic education.

In a recent videoconference sponsored by University of San Francisco, St. Joseph's, and Fordham Universities entitled: "St. Ignatius in Cyberspace" (http://www.sju.edu/cyberspace), Rick Malloy, S.J., from St. Joseph's University, was one of three speakers who addressed the potential impact of technology on Jesuit education. Father Malloy stated, "Education is a means to equip humans around the globe with the skills and resources to confront the challenges of ignorance, poverty and

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war. Online and distance education are perhaps the most powerful means of providing resources and making education accessible for all. Technology in higher education may contribute to the elimination of human suffering by making education accessible." Through technology poor and disadvantaged students can get a liberal arts education that once was only available to the elite of society. Online and distance education can reach more diverse students so that Jesuit higher education will extend to individuals who, for social and/or economic reasons, cannot enroll as traditional students.

The commitment to technology in Jesuit education is illustrated by the establishment of The Jesuit Distance Education Network (JesuitNET), created in 1999. JesuitNET is a collaborative effort of 25 U.S. Jesuit Universities and Colleges that allows Jesuit campuses to develop, share and deliver a broad range of online academic programs and services for a national and eventually an international audience. JesuitNet seeks to meet the diverse needs of both traditional and non-traditional learners by providing a flexible and convenient way to learn, and by complementing traditional classroom learning. As technology use increases on Jesuit campuses, the role of JesuitNET will help reduce costs and allow for the expansion of Jesuit higher education around the world.

Institutions Offering Online Courses (Percentage)

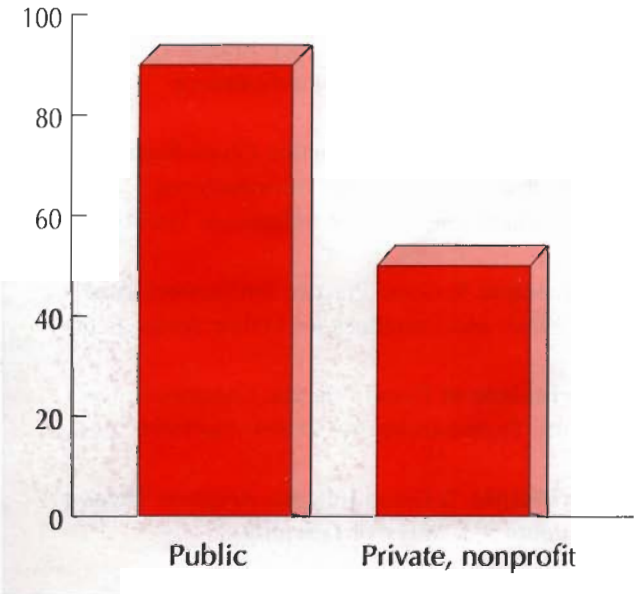

Figure 1
(The Sloan Consortium - September 2003)

Technology as a Change Agent in the Academy

The use of technology as a tool to deliver instruction has resulted in a dramatic change in the academy. The traditional model of faculty lecturing students is being replaced with faculty as "facilitators of learning." New pedagogical principles are emerging that center on creating engaged learning environments in which students actively participate and take ownership in the learning process.

There is ample evidence that students learn as much online as they do in traditional classroom environments. Thomas L. Russell created a "No Significant Difference" web site (http://teleducation.nb.ca/nosignificantdifference/) that presents the results of 355 research reports, summaries and papers that report no significant differences between the learning outcomes of online students and students in traditional classroom-based instruction. As the Sloan Consortium's "Seizing the Opportunity: The Quality and Extent of Online Education in the United States, 2002 and 2003" reports, "A majority of academic leaders (57 percent) already believe that the learning outcomes for online education are equal to or superior to those of face-to-face instruction." In addition, web-enhanced and online learning have some unique advantages for students.

One of the greatest pedagogical benefits to emerge from the use of technology in learning is the increase in the amount and type of interactivity between student and faculty both in and outside of the classroom. Robin Winegard in a 2004 *Educause Quarterly* article, "Classroom Teaching Changes in Web-Enhanced Courses: A Multi-Institutional Study" reported that faculty and students had greater satisfaction with the level of social interaction that occurred in web-enhanced courses as compared to a traditional classroom. This increase in faculty-to-student and student-to-student interaction results in the formation of a strong learning community. Online courses can be designed to foster critical thinking and reflection as well as a strong social connection among learners.

Another advantage is that learning can occur "any where, any place, and any time." Students have access to learning on a 24/7 basis. Technology offers greater flexibility in the curriculum and several delivery options so that some academic programs may be offered on an accelerated basis. This flexibility is crucial, especially when providing postsecondary education to nontraditional students. Technology provides students with freedom to participate in learning at their own pace and at times that are convenient for them.

Pedagogy and Technology: A Win-Win Combination

Instructional technologies must be thought of as ***tools*** that enhance pedagogical practices. Technology can be used to supplement face-to-face classroom activities (i.e., hybrid course) or to facilitate, guide, and direct a solely online course. Instructional technologies can be categorized as asynchronous and synchronous.

Asynchronous technologies allow a period of time for students to respond to learning objects or communication. Among the technologies that fit this description are email, discussion boards, listservs, web sites, text and graphics materials, audio and/or video delivered as a downloadable file.

Synchronous technologies allow students and faculty to engage in instantaneous, live communication. In the synchronous technologies category, chat and instant messaging are used widely, while web conferencing is becoming more popular. A technology that can be used either in asynchronous or synchronous mode is streaming audio/video. An audio or video clip can be recorded and made available for later viewing or can be delivered live with options for interactions from all parties involved. Audio and video can enhance the text information presented online to make the virtual learning community more personal. Audio and/or video can also accompany PowerPoint presentations to make them a more interesting learning experience for students.

Instructionally rich web-based courses integrate the delivery of content, facilitate interaction and enhance communication between faculty and students. Marguerita McVay Lynch, in her 2002 book, *The Online Educator: A Guide to Creating the Virtual Classroom*, presents numerous ideas on how to integrate synchronous and asynchronous technologies into web-based education. Faculty can engage students through chat and/or discussion boards. The benefits of chat and discussion boards as learning objects include: 1) to enable active participation from students; 2) to foster student-to-student and student-to-professor interaction; 3) to facilitate group work; and 4) to develop a strong learning community. Students who do not participate in a face-to-face classroom tend to become more engaged in an online course due to the interaction necessary to meet the course requirements.

Most online courses use some type of Course Management System (CMS) such as Blackboard, WebCT, and Angel. A CMS allows faculty to post syllabi and class notes, engage students in group projects, use chat and discussion boards for communication and assess student learning using online tests and quizzes. Faculty can post students' projects or papers for class review. Individual student grades can be posted via the CMS gradebook so that students have immediate feedback. Many faculty report that a CMS helps them to be more organized in the delivery of course materials.

Technology provides faculty with more free time from traditional lecturing to focus on different delivery mechanisms of class material via videos, multimedia, simulations, and instructional games. Faculty can post class notes for students to download so that valuable class time can be used to engage students in problem-solving tasks, group work, role-playing, case study analysis, and question/answer sessions.

Seven Principles for Good Practice in Online Learning

Principle 1: Good Practice Encourages Frequent Student-Faculty Contact with Clear Guidelines for Interaction

Principle 2: Good Practice Encourages Cooperation Among Students via well-designed online assignments to encourage interaction and collaboration

Principle 3: Good Practice Encourages Active Learning in an Online Environment

Principle 4: Good Practice Gives Prompt Feedback That Can Be Informational Feedback and Acknowledgement Feedback

Principle 5: Good Practice Emphasizes Time on Task and Deadlines for Online Assignments

Principle 6: Good Practice Communicates High Expectations for Online Students

Principle 7: Good Practice Respects Diverse Talents and Ways of Learning

Table 1

As a result of technology many faculty are examining their teaching style and broadening their instructional approaches to focus on more learner-centered activities. Technology can have a powerful effect on student learning and improve faculty teaching if used ***effectively***. The benefits of technology-enhanced pedagogy will result in a win-win combination for faculty and students.

Good Practices in Using Instructional Technologies

Courses that incorporate technology should be planned based on Instructional Design (ID) principles. Faculty who teach using technology should collaborate with an instructional designer to develop a course that has innovative design and built-in support systems. The best ID model is one that is learner-centered; therefore, it is important that faculty assess the learning style(s) of the student audience. One of the more popular ID models, developed by Dick and Carey (1996), suggests that faculty analyze the learner's knowledge of the topic, academic motivation, educational and computer skills, and student learning styles when developing an online course. McVay Linch (2002) states that, "The teacher needs to vary the online teaching strategies to include a variety of styles (e.g., graphics, text, opportunities for kinesthetic application, interaction with peers and instructor, and reflective time)." The use of a variety of instructional technologies that integrate visual, auditory and kinesthetic learning objects will meet the learning style of most students.

Table 1 depicts Chickering and Reisser's (1993) good practices in online learning. These principles are learner-centered and promote a great deal of interaction and collaboration among faculty and students. Faculty who incorporate these principles into their courses will better ensure that students have a positive learning experience.

As is the case with traditional education, assessment is a critical factor in determining whether the goals of a course have been met and whether technology helped students achieve desired learning outcomes. There are several levels of assessment that must be done when evaluating web-enhanced or online courses.

The first level of assessment is to determine whether students have mastered the learning outcomes for the course. Faculty should use multiple assessments to obtain a complete picture of students' learning. Mastery of content can be evaluated using online using tests, quizzes, written assignments and projects.

The second level of assessment is to evaluate the effectiveness of technology in delivering course content. A variety of tools are available to assess the ease of navigating web-based courses, ability to access materials, and opportunities for interaction with faculty and students. The assessment tool also should query students about the appropriateness of the technology and whether it enhanced student learning.

On the third level, the students evaluate the instructor's effectiveness in the delivery of web-based courses. Course evaluations should include questions that address the instructor's use of effective online teaching methods, opportunities to develop critical thinking, research, communication skills, and faculty's accessibility to students. The results of these assessments should be used to modify courses in order to increase their learning effectiveness.

Future of Technology in Jesuit Universities and Colleges

The future of technology in Jesuit universities and colleges is uncertain. Some faculty and administrators speculate that, if Jesuit higher education is to remain viable in the postsecondary market, technology must be integrated into the curriculum. Others are fearful that technology may erode the Jesuit philosophy of educating the "whole person" intellectually, socially, morally and spiritually. The decision to move forward with technology must be determined by each Jesuit university and college through careful consideration of its mission, culture, faculty, upper-level administration support, infrastructure and, most importantly, student demands and needs. It may be necessary to develop new, innovative teaching and learning models that integrate the principles of Jesuit and Catholic education with effective web-based teaching practices.

Jesuit higher education must be responsive to the learning styles of a new generation of college students. Students must be prepared to live and work successfully in a world that is destined to become more dependent upon technology. Students' exposure to the effective and ethical use of technology in a higher education forum will help them discern the economic, social, moral and political impact that it can have on society. Students also will gain insight into how future generations of students in Jesuit universities and colleges can experience academic success in a virtual learning environment.